MONTHLY JOURNAL OF
THE MUSHROOM GROWERS'
ASSOCIATION

MGA BULLETIN

OCTOBER, 1953 · NUMBER 46

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25 SEP 1953

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THAT HAS
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AMONG 2,000
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can be used when in full Flush.

" 386 " WET MUSH SPREADER, one of our best selling lines.
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3%				4%			
1 cwt.	147/6d.	½ cwt.	76/3d.	1 cwt.	172/6d.	½ cwt.	88/9d.
28 lb.	40/3d.	14 lb.	21/6d.	28 lb.	46/6d.	14 lb.	24/10d.
	7 lb.	12/3d.			7 lb.	13/11d.	

" 386 " DDT DUST	5%	10%
In 1 cwt. lots	80/-	123/-
½ ,, ,,	42/6d.	67/-
¼ ,, ,,	24/-	36/-
14 lb. ,,	13/6d.	19/-
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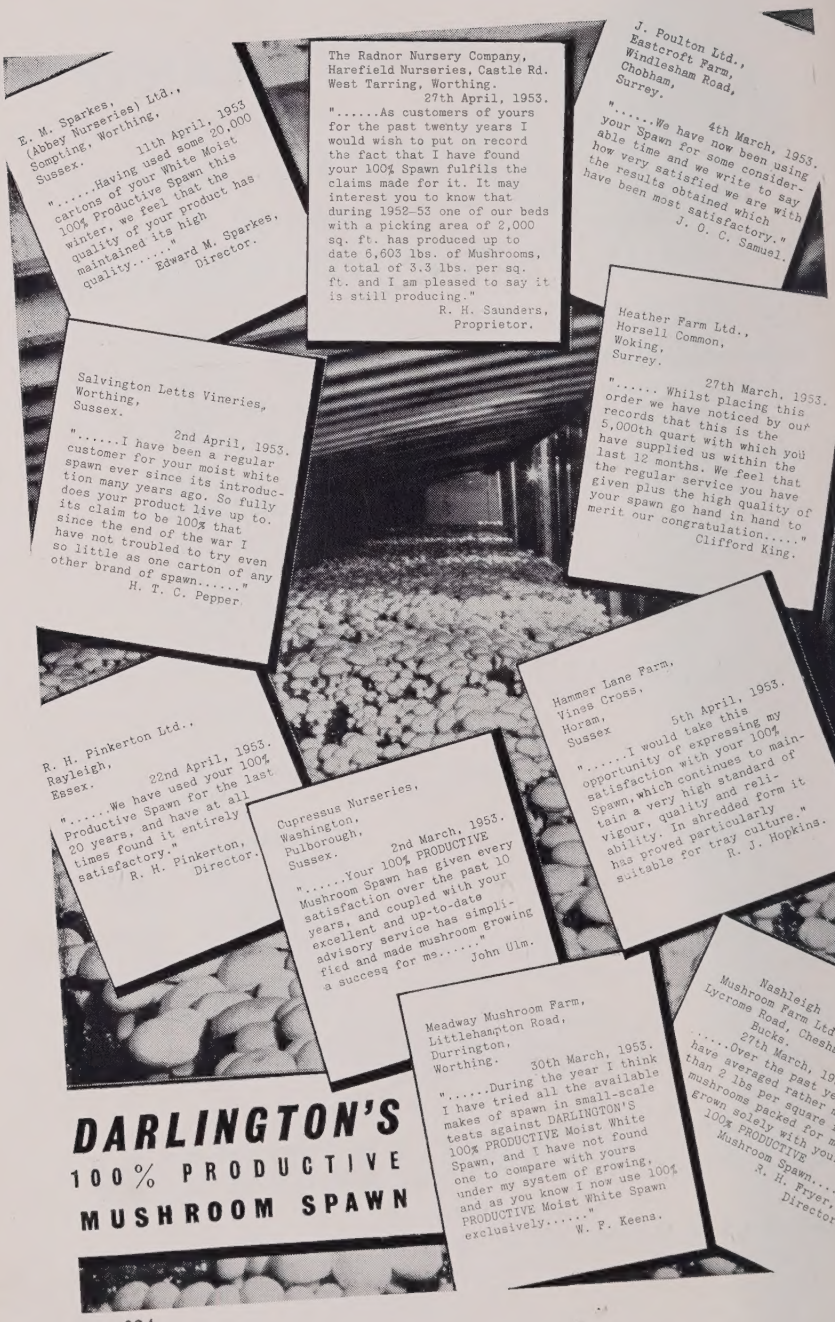

E. M. Sparkes,
(Abbey Nurseries) Ltd.,
Sompting, Worthing,
Sussex.
11th April, 1953.
".....Having used some 20,000 cartons of your White Moist 100% Productive Spawn this winter, we feel that the quality of your product has maintained its high quality....."
Edward M. Sparkes,
Director.
The Radnor Nursery Company,
Harefield Nurseries, Castle Rd.
West Tarring, Worthing.
27th April, 1953.
".....As customers of yours for the past twenty years I would wish to put on record the fact that I have found your 100% Spawn fulfils the claims made for it. It may interest you to know that during 1952-53 one of our beds with a picking area of 2,000 sq. ft. has produced up to date 6,603 lbs. of Mushrooms, a total of 3.3 lbs. per sq. ft. and I am pleased to say it is still producing."
R. H. Saunders,
Proprietor.
J. Poulton Ltd.,
Eastcroft Farm,
Windlesham Road,
Chobham,
Surrey.
".....We have now been using your Spawn for some considerable time and we write to say how very satisfied we are with the results obtained which have been most satisfactory."
4th March, 1953.
J. O. C. Samuel.
Salvington Letts Vineries,
Worthing,
Sussex.
2nd April, 1953.
".....I have been a regular customer for your moist white spawn ever since its introduction many years ago. So fully does your product live up to its claim to be 100% that since the end of the war I have not troubled to try even so little as one carton of any other brand of spawn....."
H. T. C. Pepper.
Heather Farm Ltd.,
Horsell Common,
Woking,
Surrey.
27th March, 1953.
"..... Whilst placing this order we have noticed by our records that this is the 5,000th quart with which you have supplied us within the last 12 months. We feel that the regular service you have given plus the high quality of your spawn go hand in hand to merit our congratulation....."
Clifford King.
R. H. Pinkerton Ltd.,
Rayleigh,
Essex.
22nd April, 1953.
".....We have used your 100% Productive Spawn for the last 20 years, and have at all times found it entirely satisfactory."
R. H. Pinkerton,
Director.
Cupressus Nurseries,
Washington,
Pulborough,
Sussex.
2nd March, 1953.
".....Your 100% PRODUCTIVE Mushroom Spawn has given every satisfaction over the past 10 years, and coupled with your excellent and up-to-date advisory service has simplified and made mushroom growing a success for me....."
John Ulm.
Hammer Lane Farm,
Vines Cross,
Horam,
Sussex
5th April, 1953.
".....I would take this opportunity of expressing my satisfaction with your 100% Spawn,which continues to maintain a very high standard of vigour, quality and reliability. In shredded form it has proved particularly suitable for tray culture."
R. J. Hopkins.
Meadway Mushroom Farm,
Littlehampton Road,
Durrington,
Worthing.
30th March, 1953.
".....During the year I think I have tried all the available makes of spawn in small-scale tests against DARLINGTON'S 100% PRODUCTIVE Moist White Spawn, and I have not found one to compare with yours under my system of growing, and as you know I now use 100% PRODUCTIVE Moist White Spawn exclusively....."
W. F. Keens.
Nashleigh
Mushroom Farm Ltd.,
Lycrome Road, Chesham,
Bucks.
27th March, 1953.
".....Over the past year I have averaged rather more than 2 lbs per square foot mushrooms packed for market grown solely with your 100% PRODUCTIVE Mushroom Spawn....."
R. H. Fryer,
Director.
DARLINGTON'S
100% PRODUCTIVE
MUSHROOM SPAWN

The
MGA BULLETIN

OCTOBER 1953
NUMBER 46

EDITORIAL

Farewells and Hail!

This number of the Bulletin is published a week earlier than usual for several reasons, and some explanation is required.

1. It was felt it would provide a useful, final reminder of the two-day programme at Harrogate next week. McGregor Bulloch has gaily illustrated the main events on p. 335. The Chairman's Reception, the Annual Lunch and the Annual General Meeting are all at the Hotel Majestic. The Competition Judging is in the Royal Hall. The Civic Reception is in the Lounge Hall close by—but the ladies must not be misled by Miss Marilyn Mushroom's evening gown: at none of these functions will formal dress be worn.

2. The July Editorial on Publicity aroused such interest that not only has a Publicity Sub-Committee been revived (Mrs. Parsons, Raymond Thompson and Terence Leach), but in their enthusiasm they hope to enlist the support of the Industry for a Publicity Campaign for Mushrooms. Do visit their stand at Harrogate. To give them a good send-off I have made this a Publicity Number.

3. The September issue of the Bulletin was out-of-date almost before it was printed. In view of Mr. Percy Anderson's return to hospital and the unlikelihood of his early return to duty the Executive Committee decided (with the utmost reluctance) to seek another Secretary. Few members met Mr. Anderson during his few weeks at Yaxley, but he has the sincere sympathy of us all. We hope he will be speedily returned to good health.

4. The Executive Committee asks that a warm welcome will be given to Mr. Anderson's successor, Mr. W. R. Alderton, of Witham, Essex. It will not be easy for him to pick up the threads and resolve the difficulties inevitable through a second change in the Secretaryship within six months, and we hope members will not press him too hard during his first month or two at Yaxley. Unofficially, he and his wife will be at our Harrogate meetings; officially, he will take up his duties at Yaxley the following Monday.

5. The final reason for early publication of this issue of the Bulletin was personal. For the past nine years there can have been few days when the MGA was not actively in my mind. I have been entrusted with many responsibilities and at various times have occupied all offices, and I have tried to do my best. Now I have been *ordered* to relax for a while.

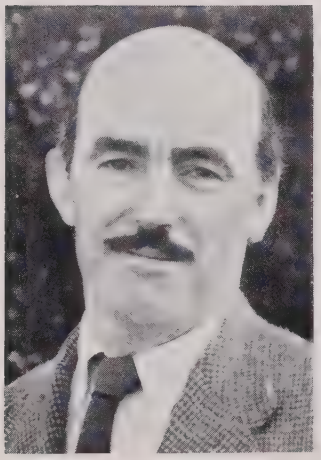
I wanted this opportunity to explain now, to save myself embarrassment at Harrogate, why it is I am not standing for re-election to the Executive Committee. Within a few weeks our new Secretary will be taking over the advertising management of this Bulletin, and in

the New Year will assume full editorial responsibility. I hope only to be allowed to assist in the final stages of the MRA negotiations.

Thank you all for all you have done to make these last nine years so unforgettably joyous for me.

Fred C. Atkins.

Mr. W. R. ALDERTON



Winston Alderton, our new Secretary, is a Suffolk man by birth but has spent most of his life in Essex where, for a number of years, his activities have been divided between journalism and farming. During the war he served with the R.A.F., both in this country and overseas, being in that branch of the services which mystified so many people for such a long time—Radar. His experiences as a journalist have, of necessity, covered a very wide field and he has been the agricultural correspondent of two Essex newspapers.

He himself writes:—" From a comparatively early age I formed the opinion that people engaged in the Agricultural Industry, in all its branches, were the salt of the earth, and each passing year has strengthened that early opinion. I know I shall be among friends in the MGA."

Aged 46, married, with two children, he is keen on most outdoor sports, particularly shooting.

NEW (AUGUST) MEMBERS

Blank, Bernard B., Michigan Mushroom Co., Niles, Michigan, U.S.A.
Hopewell, R., 21 Coronation Court, Hamfrith Road, Stratford, E.15.
Kneebone, Dr. Leon R., Director of Mushroom Research, State College, Pennsylvania, U.S.A.
Bo T. Wendler, P.B. 15, Halmstad, Sweden.
Gowland, W. J., Orchard Farm, Harrogate, Yorks.

CHANGES OF ADDRESS

McGregor Bulloch, The Cottage, New Road, Littlehampton, Sussex.
Gray, L. C. N., Hassobury Gardens, Hazel End, Bishops Stortford, Herts.
Green, Jacob M., 347 Valley Road, Westwood, Coatesville, Pa.

Italics indicate Honorary Members

W. A. B. HARDING *asks the same question...*

PUBLICITY WANTED?

As an ex-member of the now disbanded Publicity Sub-Committee may I support your query (July Bulletin) as to whether publicity is wanted. " Wanted " is the operative word; unless there is co-operation from, and direct action by, members THEMSELVES in general aided by the MGA, any ordinary advertising campaign on a national and intensive scale is bound to be expensive and cannot be expected out of MGA funds whilst so many growers remain outside the Association.

A sales campaign of inexpensive ideas could be put into effect by *members* acting as a combined operation in the form of chip-insert leaflets and recipes, retailers' posters, etc., purchased through the MGA at bulk price.

I doubt the value of the utilisation of covers in view of the retailers' urgency to discard them in order to display his goods. Some few years ago I shelved the proposition for this reason; the idea was to make the underside available for use as a price ticket.

Individualistic growers may not think that they require any such publicity. Increasing costs and diminished returns are hastening the day when it will be vital to publicise our produce so that the housewife will regard a purchase of mushrooms as necessary as her present demand for tomatoes and fruit.

As in the case of other horticultural commodities, the price of mushrooms is bound to decline, possibly with a sharp fall now there are no stimulating agents in the form of social activities such as Coronation events.

I regard publicity as vital and no longer to be delayed. In my small way I have found that local sales have been stimulated by a little INDIVIDUAL effort such as enclosing leaflets of SIMPLE recipes suitable for the humble home, and asking retailers to improve their display and presentation, holding a " mushroom week ", educating the public, etc., added to which a direct grower-to-retailer connection can result in a more competitive price provided the retailer will contribute to this end by accepting a reasonable profit.

It has to be realised that a social revolution since 1940 has caused the *working-class population* to become *the main source of demand* and therefore, when living costs rise as fast as wages, these consumers tend to spend less on edible commodities rather than reduce on ' extras ' such as betting, smoking, entertainment. The wise grower will study and employ the art of salesmanship and the ways in which fruit was successfully boosted.

There are opportunities in other ways—the local press, Rotary, Horticultural Societies and such bodies are always interested in the ' mystery ' of how mushrooms are grown. A certain amount of time

is required to carry out this type of propaganda, but it need not be on the scale of a costly national sales campaign; actually closer contact with the consumer can be obtained on **local** lines through the **individual efforts of each grower** assisted by simple advertising matter purchased from the MGA who could obtain it in bulk and therefore at an economic rate.

The question is: How much longer are members going to be inert until the 'shoe pinches'? I consider it is up to each member to inform the Secretary of his suggestions and, from such consensus of opinion, propaganda material could be obtained to suit the majority. Then the grower would be responsible for taking the appropriate steps to increase his sales.

For survival I think we just *have* to be 'bothered' and exert a little more **individual enterprise** than hitherto. We shall never be 'feather-bedded' and need not be; our lethargy is due to easy conditions prevailing since 1940, but now healthy economic laws are in action once again it behoves the horticulturalist to remember that his industry is not likely to be shielded by a Welfare State.

RESEARCH APPEAL, 1953

The MRA Chairman's recent appeal, and the Vice-Chairman's Editorial in the August Bulletin, have so far resulted in the total received this year being lifted to £1,115. The Board of Directors is most grateful for these generous donations (particularly those of **Messrs. Plant Protection Ltd.** and **Messrs. Geo. Monro Ltd.**) and once again asks those who have not yet contributed to do so at once, for time is running short and the target not yet reached.

	£	s.	d.
Plant Protection Ltd. ..	26	5	0
Geo. Monro Ltd.	25	0	0
H. L. Coulson	12	0	0
G. E. Leatherland Ltd. ..	10	0	0
A. Ashton & Sons.. ..	5	5	0
Atlas Basket Co. Ltd. ..	5	5	0
P. C. Brown	5	5	0
Geo. Jackson & Co. Ltd.	5	5	0
Adco Ltd.	5	0	0
Miss Ingrid Ohman (Sweden)	5	0	0
Irish Nurseries Ltd. ..	5	0	0
Alfred Baker Ltd.	5	0	0
W. B. Randall, Ltd. ..	5	0	0
R. L. & R. Speller ..	5	0	0
Gordon Collins	3	3	0
Marquess Townshend ..	3	3	0
R. W. Aubrey	2	2	0
British Basket & Besto Co. Ltd.	2	2	0
William Clelland Jnr. ..	2	2	0
P. & T. Fitzpatrick Ltd. ..	2	2	0
R. G. Warwick	2	2	0
James J. Martland.. ..	1	1	0
Hy. Richardson & Co. (York) Ltd.	1	1	0
West Dock Timber Co. Ltd.	1	1	0
R. L. Scarlett	1	0	0
D. A. Turner	1	0	0
K. V. S. Francomb ..		10	6
Bankers' Orders (August)..	10	0	0
	156	14	6
B./fd.	958	18	3
TOTAL	£1,115	12	9

Mrs. R. PARSONS *fires the imagination with . . .*

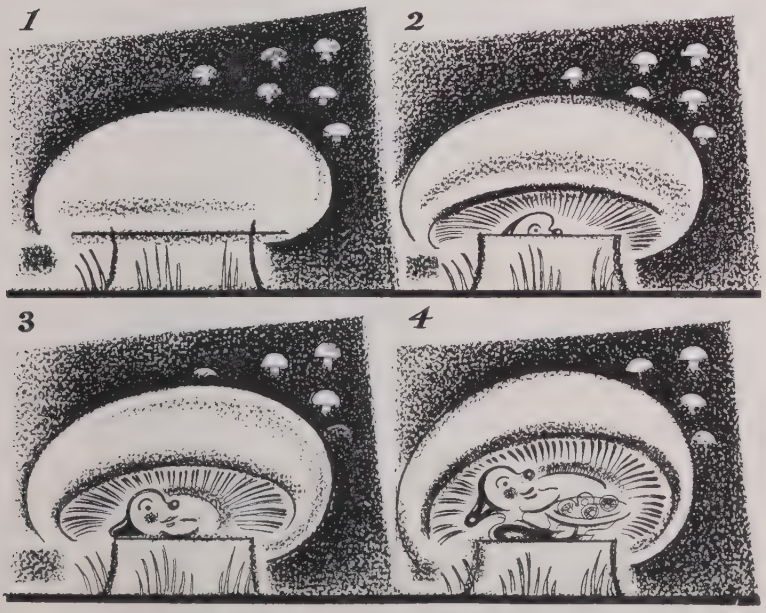
"Au Champignon"

Not forgetting Kiosks and a Dwarf

On a recent visit to Yaxley Mr. Atkins asked me for my favourite recipes. The ones I am sending him are not very original, and my "favourites" mainly as they are so easy to prepare (see p. 332).

We went on to talk about publicity in general, and I remembered a dwarf display which I happened to see in Portugal, advertising a camera. It was remarkably funny and fascinating, and attracted a large crowd to the shop window. It could readily be adapted to advertise mushrooms.

I have in mind a mechanical display which represents a closed mushroom made so that it will open gradually, the top of the mushroom lifting to reveal in stages a dwarf, who finally will be holding a plate which contains some particular mushroom delicacy. The mushroom cap then closes slowly. After a short time the mechanism repeats the process. There are of course some subtle details, such as the dwarf's eyes turning from right to left before bringing the rest of his head up,



and naturally registering a large smile when he shows the dish. (And sometimes he should come up with an empty platter, the corners of his mouth turned down.) See the sketches done by Mr. Kenneth Wood. *It would be a sort of display to be used in a " mushroom publicity week " in London, or a large provincial town, and of course at agricultural shows.*

Photopress—Bilderdienst, Zurich/Bern

In a Swiss paper recently I came across another attractive idea; the toadstool-kiosk. This has established itself there, as well as in Germany, on the main motoring roads. Could we not make use of such kiosks for advertising mushrooms? Mushroom soup would be served, salad with mushroom combinations, *vol au vent champignon;* even sandwiches with the subtlest of mushroom fillings. And, of course, there would be mushrooms to buy. **I should like, say, six of them at intervals along the Great North road,** somewhere between London and Edinburgh. They would be eye-catching on a straight stretch of highway in daytime, but most striking at night with the roof lit up and glowing red.

And why not a restaurant devoted to mushroom specialities? There are restaurants for those people who want an exemplary menu of fish; and lovers of oysters and shellfish are catered for by bars that serve nothing else; but where would you go if you wanted a superb mushroom dish?

One can easily visualise such a restaurant in the West end or Soho. It could only be called "Au Champignon". Its awnings would be the shape of a half cap, with a pinkish light descending from the gills.

It should be a small place, and inexpensive and simple—but essentially unique. If one thinks of all the trouble people go to in furnishing and decorating their dining rooms, or kitchens, at home, how much more important it must be to them to eat in an attractive setting when they have an evening out. I should have only about twenty tables, with red and white checked tablecloths (and napkins), in a low ceilinged room, with beautiful pictures on the walls (paintings that are loaned by artists, as is the custom in France).

I should like it to be a restaurant which provides not only the three and four course dinner, but where people can have a one course meal. And how well do mushrooms provide the individual dish!

Kenneth Wood's sketches represent very attractively Mrs. Parsons' suggestion for a restaurant specializing in mushroom dishes. You must *see the originals at Harrogate.*

My Favourite Recipes

7.—Mrs. R. Parsons

Mushroom Soup

1 lb. mushroom stalks
water
3 oz. margarine
3 oz. flour
1 small onion
1 pint milk
1 yolk of egg
2 teaspoons lemon juice

Wash and chop the stalks, cover with water, simmer until tender (about 1½ hours). Meanwhile make a white onion sauce by melting margarine; add chopped onion (do not brown), add flour, then smoothly stir in the milk, season with salt and a little pepper, and mix this with ready cooked stalks. Mix lemon juice with yolk of egg in a cup and add this to the soup when it is off the fire, just before serving.

Ragout de Champignon

1 lb. mushrooms
2 oz. margarine
2 oz. flour
1 large onion
1 gherkin
1 tablespoon of capers
chopped parsley

Wash and cut up the mushrooms. Put a cup of water in a saucepan and stew mushrooms gently in this until tender. Melt margarine in another saucepan, fry finely chopped onion in this (do not brown), add flour, stirring to a smooth paste slowly adding water from cooked mushrooms. Season. Mix in mushrooms, gherkin, capers, parsley. Serve with macaroni or rice.

Cauliflower with Mushroom Sauce

1 cauliflower
Bechamel sauce
½ lb. mushrooms

Cook cauliflower in salted water until tender. Chop mushrooms, simmer with a drop of water until tender. Make a white sauce by melting 1½ oz. margarine, adding 2 oz. flour and stirring all the time. Slowly add enough milk to make a very thick sauce. Then add some of the mushroom water and season. It should be a thick creamy sauce. Mix in the mushrooms. If possible add just before serving a yolk of egg stirred up with a teaspoonful of lemon juice. Pour all this over cauliflower. Serve with roast potatoes.

Spinach, Mushroom and Cheese Sauce

(*This is a Philip Harben recipe, adapted*)

2 lb. spinach
½ lb. mushrooms
2 oz. margarine
1½ oz. flour
¾ pint milk
4 oz. cheese

Cook spinach for 3 minutes in boiling water and mince it. Place it in a shallow fire-proof dish and cover with small mushrooms, sliced

horizontally. Put the dish under a gentle grill while you make a cheese sauce as follows:

Melt the butter in a small saucepan, stir in the flour, beat the milk in gradually, bring it to the boil, stirring all the time and it will thicken. Grate the cheese and stir it in. Season with salt and pepper.

Pour the cheese sauce, boiling hot, over the mushrooms and spinach and brown the dish off under a hot grill.

Coq au Vin

1 roasting chicken
1 cup dry white wine
4 small onions
4 oz. butter
¾ lb. mushrooms

Take one rooster and cut into neat pieces. (Better still ask your poulterer to do it for you.) Brown the pieces in butter in a frying pan. Lift them out and place into a deep casserole. Pour a large cup of dry white wine into the pan in which the chicken was fried and stir up. Pour this over chicken, add a good cupful of stock or water, 4 small peeled onions and seasoning. Bring to the boil and let it simmer very gently, turning over from time to time. The pieces should be so placed in the casserole that the legs are underneath, while the wings and breast get cooked in the steam above them. 20 minutes before it is cooked add ¾ lb. small whole mushrooms. Thicken sauce with 1 oz. flour and a little water before serving.

I have not mentioned in these recipes that *cultivated mushrooms do not need peeling*.

SEEN THIS?

Messrs. W. Darlington & Sons Ltd. are now marketing the " Evans " Sprayer (seen here) at £3 18s. 9d. They claim it is a real contribution towards solving an important cultural problem. The salient points of the " Evans " Sprayer are that the water is emitted as a fine spray, so reducing danger of panning and over-watering, and the valve, which can be operated easily by the fore-finger, gives immediate control over the volume of water passing. Additionally, the 6 jets are so positioned on the cross bar, and the cones formed by the special jets so arranged, that they do not impinge on each other, and droplets do not form.

TERENCE LEACH *has some*

MORE PUBLICITY IDEAS

I don't actually put the " Don't have to peel " stickers on the underside of my cardboard covers, *but on top*. As it happens, I have special *plain* grey cardboard covers, and the stick stands out very plainly. My paper covers go on top. The wording is meant to be a constant reminder to the retailer, who I hope will in turn either pass on the information to customers or use the cover as a background display card.

I feel very strongly with you on this question of publicity and the apparent apathy of growers, and would lay particular stress on Reminder Advertising. Gradually it sinks in and in the case of good slogans or catchy phrases, come naturally to everyone's thoughts and lips, e.g., GUINNESS IS GOOD FOR YOU and PLAYERS PLEASE. Why not with mushrooms? If growers buy goods through advertising and publicity, surely they must see that others will buy mushrooms for the same reason.

I truly believe that the thought of peeling is a great deterrent to the housewife, and the fact that it is unnecessary a most important point to get over. After all, nearly everyone loves mushrooms and the price has in recent years come nearer to more people's pockets! Admittedly, a resultant better demand might firm the price, but by then the public would probably be more mushroom minded and not mind paying the hoped-for *gradually* increasing prices.

Another point to get over if possible seems to me to be the cost of production. Some people, I'm sure, subconsciously resent paying what they consider a high price, because they think mushroom growing is simple and don't know that it costs, say, 2/6d. per lb. to produce them. Of course they also don't know that even when the producer gets below-cost price, few retailers reduce their prices in proportion.

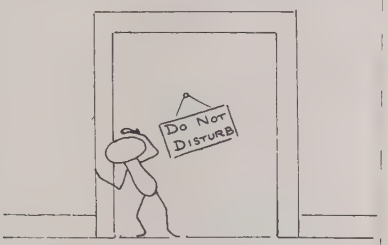
Here is an idea for the wider distribution of our Recipe Leaflets. Advertise cheaply in women's magazines and journals, including the cheap type, in a few lines, that copies of the recipes will be sent free on receipt of largish *stamped* addressed envelopes. The public love anything free and it might spread the mushroom habit. I would also advocate a sticker somewhat like mine being attached to the outside cover, or embodied flagrantly on any reprints.

Could not " Women's Hour " or Cookery talks on the wireless be persuaded to put over some mushroom recipes—*also* emphasizing NO PEELING? Again, it might be worthwhile having stickers printed and six or so sent with the Bulletin to each member, suggesting that he should try them out with his wholesalers, and asking them for their comments on continuing the idea. This might reach hundreds of wholesalers all over the country, and after all, better retail sales would affect their pockets. Ten to one, many wholesalers and retailers have no idea that cultivated mushrooms need not be peeled.

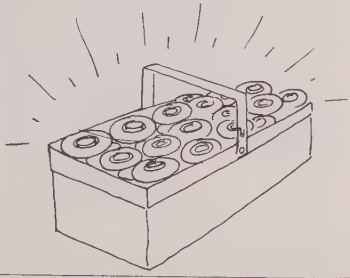
HARROGATE—NEXT TUESDAY

11 a.m. Reception by Chairman.

1-0 p.m. Lunch.



2-30 p.m. M.G.A. meeting.



6-0 p.m. Competition Judging.

9-0 p.m. Mayor's Reception.

And the next day
Wednesday, 30th September
there's the
MUSHROOM INDUSTRY
EXHIBITION
at the
ROYAL HALL
HARROGATE!

"MOST EFFICIENT METHOD"

Commdr. D. A. Rayner deprecates Mr. Middlebrook's Criticism of Trays

Surely the Mushroom Growers' Association stands for the advancement of the science of growing our common product? If this is to be its aim then how can you encourage the publication of articles that ridicule this most efficient method and pour scorn on those who have adopted the method on their own farms. I, for one, was surprised to find such an article as " The Tray System Condemned " in a serious publication devoted to the way in which we all earn our bread and butter.*

As scarcely any of the contentions in this article in the July Bulletin contained accurate figures for an efficiently run tray-system—it is a little difficult to counter them unless this letter were to fill many pages—I will therefore stick to generalities and maintain that on my own farm the change to the tray system has doubled production with no more labour cost than the employment of more girls to pick the larger crop while the fresh capital involved has been confined to a " Chatsworth " manure turner and a larger van to take the increased output to the railway.

It is true of course that I now spend twice as much on manure and spawn—but all other overheads per lb. of mushrooms produced are cut in half with the exception of the disease control bill which has been reduced to a tenth of its former proportions.

None of us, not even the most Olympian, can afford to run counter to economic trends although we may be encouraged to live in a fool's paradise during a time when there is a fictitious demand for our products. The difficulty of maintaining a very tight schedule is in my opinion a cheap price to pay for cutting the cost of production in half—while once you have become accustomed to the routine it is very nice to know just what your work will be on any day six months or a year hence.

If the writer of the article in the July issue can look forward with as much equanimity as I can to a condition when the average price of mushrooms over the year is 2/- per lb.—then of course he would be crazy to change his views or his ways. If on the other hand he feels that such a price would endanger his health or his hobbies, then I would seriously suggest that he should reconsider his attitude before it is too late.

Not all tray growers in this country are poorly mechanised, untidy, or time wasters; but as no prophets have honour in their own country, for the love of heaven let this gentleman go and see some foreign outfits —they might open his eyes to the extreme danger of his position. At least Canute did know that he could not stop the tide.

*THE EDITOR writes: It was the MGA Bulletin which introduced the Tray System to Great Britain. Since then, it has from time to time published arguments for and against. I would have been neglecting my duty had I ignored a public lecture on the System by a specialist grower of Mr. Middlebrook's calibre on the ground that it might give offence in certain quarters.

Dr. B. B. STOLLER'S REPLY

TO Dr. J. W. SINDEN'S LETTER IN THE JULY BULLETIN

In the same vein as Dr. Sinden's criticism, I find several of his statements at variance with the facts as published in my paper, "A Theory of Composting Based on the Inverse Yield-Nitrogen Law". His 'brief commentary' shall be reviewed in the order in which he wrote it.

Dr. Sinden claims now that "one portion of the process depends on the presence of ammonia and high temperatures", whereas in the previous article by Sinden and Hauser they claimed as a feature of their process the "conservation of nitrogen", so that they did not need to add additional proteins as Dr. E. B. Lambert did in some of his experiments. How can nitrogen be conserved and at the same time lost as ammonia gas?

Dr. Sinden appears to confuse the laboratory experiments discussed in my paper with the applied, plot experiments in his remarks about temperatures. Sinden and Hauser made no reference to temperature control, and specifically not to the need of "high temperatures" in their method of composting. Neither did I make any reference to reducing the temperatures in plot experiments; in fact the only factor which I mentioned that could be controlled in the usual commercial practice was the duration of composting. But Lambert and Ayers did refer to the need for high temperatures (150° F.) at the initial phase of their process.

His statement about "the fallibility of the Inverse yield-N Law which carried to its ultimate would lead to the absurdity that the highest yields would be obtained when no nitrogen at all is present"—merely demonstrates how completely he has disregarded the discussion of the "Principle of Limiting Factors" in my publication. Besides, he has missed the discussion about the relationship between large increases in yield and small changes in % N.

His statement that "no grower would be able to determine in advance what the C availability would be for any specific compost" is not in accord with the facts as published in my paper. Even by the use of Sinden and Hauser's data it was shown that the duration of composting affected the C availability. Then it was shown that from analyses of the composition of the materials of the compost, such as liquorice roots, bark, straw, etc., the C availability of a specified compost could be known in advance. For example, since the analysis of liquorice roots and straw is known, it should be clear that the C availability would be less for composts with the roots than with the straw. Another factor affecting C availability is the size and shape of the pile, that is, indirectly the influence of temperature and aeration on the rapidity of the microbial decomposition. So if the grower knows in advance the composition of the materials and plans in advance the duration of composting and the size and shape of the pile, he can predict the C

availability in advance. With experience and standardization of procedure, the prediction of available C could become relatively accurate.

His statement that I have not done " at least preliminary investigation to substantiate " my theory is not quite so. If it were not for the *experimental data* presented in Table 1 of my paper, I would never have conceived of this theory or the possibility of the applicability of Willcox's Inverse Yield-N Law. The data in this table is not offered as confirmation of this theory, but such might be recognized as data of a preliminary investigation.

I do not know the authority for his statement that " scientists are always averse to doing the experimental work necessary to substantiate other scientists' theories ". But I have read recently a review by Dr. Ashley Montagu, an American scientist who, I hope, is as qualified to speak for " scientists " as Dr. Sinden. Montagu reviews a book, " The Growth of Scientific Ideas " by W. P. D. Wightman, who is referred to as " a leading British authority " who " tells how the great scientific discoveries came to be made ". The quotation is from the review by Montagu:

> " The essence of science is the framing of hypotheses—good ones if possible—but better bad ones than none at all. A hypothesis is a supposition suggested by the facts which will help us to explain them in a simple way. ' The hypothesis ', Wightman explains, ' may or may not be true, and it can never be proved to be true; but the more facts it helps to explain, the more truth it probably contains.' It cannot be too strongly emphasized that people who say that ' Science must be true because it deals only with facts ' are under the gravest misapprehension. The exclusive concern with facts is merely the orderly collection and recording of data; this becomes science only when hypothesis, that is, departure from fact, is resorted to."

I might add to this quotation that without hypotheses it would be very difficult, if not impossible, to acquire really significant facts. Facts and hypotheses go together: From facts we derive hypotheses, and with hypotheses we discover new facts—the usual ' alternation of generations ' as we find in nature. I see no reason why Dr. Sinden should decry my effort and objective in attempting to correlate the data about the large yields recently reported, and in providing a hypothetical basis for the process of composting.

Dr. Sinden's references to " assessing the credit due a particular man for a development " and " to hunt for bits of evidence, etc." is no more typical of me than of him. For example, in Sinden's Pa. Agr. Sta. Bulletin of 1946 he states that one " Malebranche," on the basis of " unpublished information " known, as far as I can discover, only to Sinden, developed the same solution to the problem of synthetic composts as I did. As for hunting for bits of unrelated information, one should read Sinden's discussion in this Bulletin of 1946 about the priorities to my use of potassium for mushroom composts; for example, he

refers to Hebert and Heim's publications of 1911, whereas it has been shown by Treschow in 1944 and myself (Thesis, 1945) how unreliable and confused those early publications were. Or if Cayley used K but found it unnecessary, or Waksman and Reneger merely mentioned the word K, that was enough for Dr. Sinden as a basis for priority. Whereas in showing priority of rapid composting methods, I referred to Dr. Lambert who has been practising and publishing in this sphere for some 30 years, and also to myself, similarly for some 20 years.

As for Dr. Sinden's and the Editor's remarks about Dr. Lambert's attitude in this matter, I say let the facts as published speak for themselves. In Dr. Lambert's " Comments on Twenty Years of Research in Mushroom Culture " delivered before the First International Conference in 1950, I find no evidence whatsoever that would identify " short composting method " with Dr. Sinden in particular. Rather, Dr. Lambert's reference in his section on Page 8 to " composting and pasteurizing " is substantially the same as I discussed about his methods; in fact Lambert's comments in this section were helpful in making what I think is a proper interpretation of Lambert's and Sinden's contributions.

Dr. Sinden minimizes the significance of Dr. Lambert's procedure in requiring a very high initial moisture (250%) of manure for a rapid composting method, then fails to mention that Lambert required the addition of gypsum along with a high moisture content, and finally states that he made a similar observation on the need for high moisture in his publication of 1936. (I do not know of any publication by Sinden in 1936, but his Pa. Exp. Sta. Bull. No. 365 on " synthetic composts " was published in June, 1938). His reference to " nearly saturated " straw with water in preparing synthetic composts is not different than the requirement for moisture with *dry* straw for " artificial manures " by Richards and Hutchinson in 1921 along with the many others who have worked on the problem of " artificial manures ". But this is a different matter than proposing a moisture content of 250% for a *rapid* decomposition of manure, besides the need for gypsum in order to facilitate the use of such high moisture, as advocated by Lambert in 1941. Sinden and Hauser state in 1950 that the first of the two " important objects " of their process is a moisture content of 250%. The significance of a high initial moisture cannot be minimized; it is a crucial step in obtaining a rapid hydrolysis and microbial decomposition of composts, while at the same time providing sufficient moisture under conditions of better aeration. Frequently a step of a procedure seems very simple after it is known; the two publications by Dr. Lambert in 1941 testify to the amount of investigation in engendering this step.

Furthermore, Dr. Lambert's procedure for rapid composting was practised by growers in 1941 and thereafter. Various growers made changes in his procedure according to their requirements and experience. Where growers found out about Sinden's " short composting " method prior to the publication by Sinden and Hauser in 1950, I do not know. Personally, I did not hear of any rapid method of composting by Dr. Sinden until I read his publication of 1950.

Dr. Sinden has ignored the significance of the revolving drum method of Stoller, Smith and Brown for a " rapid, high-temperature " decomposition of composts for mushroom culture. Even in his Bulletin of 1938, he refers to the drum method merely as a procedure for better mixing, and omits any reference to another feature of this apparatus, that is, forced aeration for rapid decomposition. With this apparatus the principle, as stated in "A Theory of Composting ", was demonstrated that with better aeration, high temperatures and mixing of the compost, the duration of composting could be shortened. Furthermore, Dr. Sinden completely ignored the fact that this principle was developed in plot experiments reported in my paper of 1943. As for the revolving drum method itself, I notice a report by Dr. Edwards in the March, (1953) MGA Bulletin that French investigators propose using a rotating drum in a research programme in mushroom culture.

Dr. Sinden appears to indicate that, at the recent conference in Gembloux, he had shown that high temperatures (presumably above 140° F.) and the presence of ammonia are the two significant phases of his process in which yields of 500 lb. of mushrooms per ton are obtained. Whereas in the publication by Sinden and Hauser in 1950 they state that the two " important objects " of their process is an initial moisture content of 250% and good aeration by controlling the size and shape of the pile. There is no mention of the need for any specific high temperatures in their publication of 1950. Even in their laboratory experiments they used a temperature of 140° F. So what Dr. Sinden means by using high temperatures as discussed at Gembloux I do not know.*

I have stated clearly that Sinden and Hauser have made an important contribution when they claim high yields of 800 lb. and now 500 lb. of mushrooms per ton of manure. Whether such high yields are explicable on the basis of some procedure of high temperatures as shown at Gembloux or on the basis of a high C : N ratio, high K : N ratio and the Inverse-yield-N law as set forth by myself, remains to be proved. But a rapid or short composting of manure as has been practised since 1941, and by which yields of about 300 lb. of mushrooms per ton are obtained, cannot be justifiably identified with Dr. Sinden.

*EDITOR'S FOOTNOTE : Dr. Sinden's and Mrs. Hauser's Gembloux Paper, " The Nature of the Composting Process and its Relation to Short Composting," is to be published shortly in *Mushroom Science—2* ; it is among the most important of recent times.

MEMBERS' SUBSCRIPTIONS

The MGA's " financial year " starts on 1st September and ends on the following 31st August. For some months the " membership year " has been dated from the month in which a member joins. This means that some may not have received their Renewal Notices on 1st September, as has been customary; but they need not be concerned—the Notices will be coming along in due course!

Stanley Middlebrook's Diary

Aug. 8. Many growers are worried about prices, which are low indeed. And it's no consolation to realize—as you will if you keep proper records—that 1953 prices are actually no worse than those in 1950. 1951 and 1952 were appreciably better than '50. It's no consolation because though the selling price is no worse the cost of production definitely *is*. The only answer is more lb. per sq. ft.—which we've been trying to achieve ever since we started in the game.

Aug. 10. Further to the last point, we do seem to make some progress. One seldom hears these days of the complete failures that were common before the last war. Science in one form or another has helped. Equally we don't often hear of the other extreme popular before the war—the 4 lb. and 5 lb. crops. (Perhaps there is more truth in us.) This fact seems to line up with a trend suggested to me to-day. " It is virtually impossible," said a high-up in one of the largest concerns in the country, " to fail or make a loss in big business. On the other hand there are now no big plums or unexpected large prizes. There seems to be an ironing out of the two extremes, finishing up safely above the security level ".

Aug. 11. In a Welsh bankruptcy court a grower who failed has blamed the War Office (for upsetting his plans in a Government Camp's air raid shelters), the Railway Executive (for delay in delivering disinfectants) and the drop in prices from 8/- to 3/6d. per lb. I don't know about the first two, but if the last is a good reason for failing we all face the court.

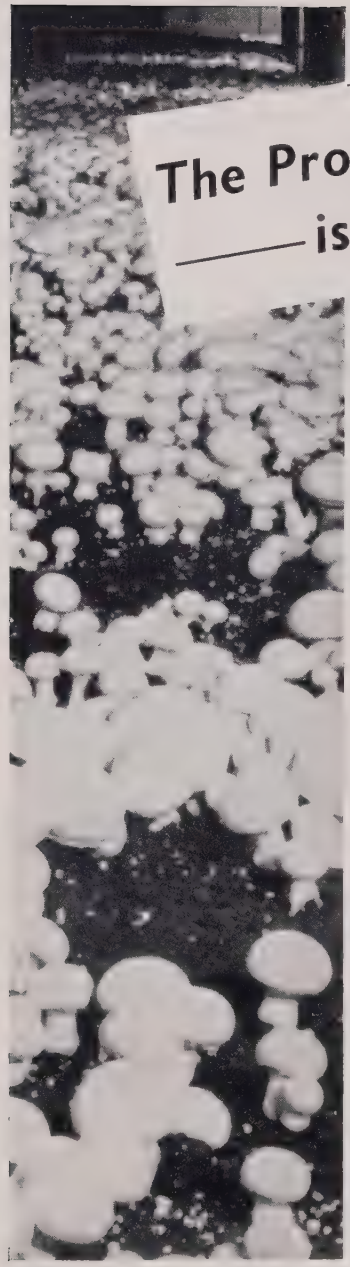
Aug. 12. Mushrooms, specially grown in Korea on oaks and pines felled for the purpose, are to be sent from that country to Australia in part exchange for coal. Dried, oak-flavoured mushrooms are said to be better than those grown in the usual way. Perhaps this explains why mushrooms are grown in many disused mansions!

Aug. 13. A patch of white " mould " measuring about 2″ square and ½″ thick developed on the surface about 8 days after casing. In appearance like a meringue, with a texture like compressed cotton wool. No sign of any sort of growth anywhere else in the house. It was sent for identification and duly reported to be a stroma. I've never really known the meaning of the pedantic expression " True Stroma " but now I perhaps do! Half an inch thick and extremely dense and in 8 days. Eight days!! Sorry, Experts. You'll have to think again.

Aug. 17. The experts have thought again. They swear it is stroma. I've seen stroma for 17 years but never anything like this 2″ square sitting on top of the bed like a piece of frozen fine snow.

Aug. 29. My hotel breakfast this morning—" scrambled eggs and mushrooms ". Actually they were mushrooms *stalks* (I wonder how many in this holiday hotel observed *that!*).

Sept. 1. Another hotel breakfast, " mixed grill ", consists of bacon, sausage and mushrooms. Stalks again and entirely tasteless. The concensus of opinion at our table is that the stalks were used to flavour last evening's " mushroom soup " and then extracted, held over, and



The Proof of the Spawn is in the Cropping

A WELL-KNOWN SOUTH OF ENGLAND GROWER WRITES:—

"Against six other varieties of spawn, growing under the same conditions, and following the same methods of composting, and using the same casing soil, Darlington's 100% *Spawn gave from* ·4 *lb. to* ·5 *lb. betterment per sq. ft."*

DARLINGTON'S

100% PRODUCTIVE MUSHROOM SPAWN

* *Our Advisory Department will be pleased to give information on Mushroom Growing to any Commercial Grower.*

W. DARLINGTON & SONS LTD.

Mushroom Spawn and Insecticide Specialists

WORTHING, SUSSEX *Est. 1860*

warmed up for this morning. They are watery, weak and flavourless. It's not surprising that people don't enthuse over mushrooms when they are presented in this niggardly fashion.

Sept. 3. The letter from Commdr. Rayner, appearing elsewhere in this issue, cannot go unanswered. My article didn't contain the detailed figures that were originally given at the Refresher Course which many people paid money to attend. Those detailed figures were taken from my own records of the two systems running *concurrently* for several years. Can the Commdr. present similar *concurrent* figures? I prefer to *test* trends, rather than accept them just because so-and-so says they're new and therefore automatically economic. My fool's paradise at the moment consists of about half a dozen major and large scale experiments such as few growers, apparently, have the courage to try. I would like to remind the Commdr. that my tray figures are at least as good as the average in the country and compared with my shelves trays become decreasingly profitable as the selling price falls below about 3/3d. (nett home). Above that trays pay best here. Perhaps we're not tray-efficient here as we find ourselves actually *handling* the boxes occasionally. I—a gentleman/fool—don't dispute the efficiency of some foreign outfits, nor do I scorn them or the Commdr., but I do know what pays *me* best. However I agree it must add enormously to the fascination of mushroom growing to know just what job will be done on the afternoon of March 27th next year and I view with pleasurable anticipation the possibility of my doubling my output so easily and at so little extra cost and would be even more delighted to congratulate the Commdr. if he would meet me at Harrogate in an appropriate part of the building.

Sept. 4. Discoveries continue to be made about the remedial value of mushrooms. It is reported that 6,000 lb. have been flown from W. Germany to America to be used to make a serum for the treatment of malignant tumours.

Sept. 5. Two Handcrafts standing side by side have had the same treatment, same compost, same casing; were filled, cased, peak-heated simultaneously; in fact they are identical in every way. In 17 days of picking one has done nearly twice as much as the other. You never can tell.

Sept. 8. I have a feeling that the most exciting event at Harrogate will be the Annual General Meeting. If it isn't I shall be surprised and relieved. A.G.M's are generally avoided by the " I-hate-all-meetings " type of grower, but I think even he will be anxious to know what is going on in the MGA this time. The Exec. Committee is concerned to know what we want out of the MGA. To give a hint of the problems ahead I might ask what is the least we are willing to take out of the Association and the maximum we would pay for it. What *is* the MGA? What are its objects? What is its main job? Come to the meeting and tell the Executive what *you* think are the answers.

Sept. 10. The competition judging at Harrogate will be very keen, I'm told. Useful hint: uniformity of packing, accurate weights and stalks upwards, are points to watch. And don't forget those mushrooms at the bottom of the basket!

SMALL ADVERTISEMENTS (3d. a word)

MUSHROOM GROWERS' supplies of all kinds, consult J. E. R. SIMONS LTD., Harlow, Essex. 'Phone Potter Street 65. Telegrams Simons Harlow. Sole distributors of MOUNT MUSHROOM SPAWN.

D.V.M. (15) POWDER. (ZINC ETHYLENE BIS-DITHIOCARBAMATE). THE ORIGINAL MATERIAL AVAILABLE FROM STOCK. 7-lb. bags 5/- per lb.; 14-lb. bags 4/9 per lb.; 28-lb. bags 4/6 lb.; *carriage and packing free.* J. E. R. SIMONS LTD., Harlow, Essex.

GYPSUM direct from Gypsum Mines, 1 cwt. 6/6, 5 cwts. 6/- cwt., 10 cwts. 5/6 cwt., 1 ton 5/- cwt., 2 tons 4/6 cwt., 4 tons 4/- cwt., 6 tons 3/9 cwt. Carriage extra, by road or rail, at cost. J. E. R. SIMONS LTD., Harlow, Essex.

RUBBER BANDS. 1 cwt. 7/9d. lb., 56 lb. 8/- lb., 6 lb. 8/6d. lb., single lb. 9/-. No. 18, 2,300 to lb., No. 32, 1,175 to lb. J. E. R. SIMONS LTD., Harlow, Essex.

SMOKE BOMBS, BHC DUSTS, DDT DUSTS. All best known brands Insecticides and Fungicides available. J. E. R. SIMONS LTD., Harlow, Essex.

PLASTIC HOSE. ½" 6½d. ft., ⅝" 8¼d. ft., ¾" 9½d. ft., 1" 1/3¾d. ft. 60 ft. lengths and multiples. Carriage paid. J. E. R. SIMONS LTD., Harlow, Essex.

TRAYS. New in all designs from 4/-, wired ends. Used fish trays from 2/-. Quotations by road or rail. J. E. R. SIMONS LTD., Harlow, Essex.

TRIGGER LANCES. To fit ½" & ¾" Hoses. Complete with Oval Rose, 37/6d. plus postage. J. E. R. SIMONS LTD., Harlow, Essex.

PEAT. We can supply several types and grades. Send us your enquiry for best carriage paid prices. J. E. R. SIMONS LTD., Harlow, Essex.

SOIL STERILIZING / COMPOST MERCURY THERMOMETER. Improved design, in stout brass case, registering 30/240 F. Fitted 2" Red Plastic Ball for easy location in heap. 17", 27/6 ; 3ft., 48/9. J. E. R. SIMONS LTD., Harlow, Essex.

BARROWS, TRUCKS, ROLLER CONVEYORS. Send your enquiries to J. E. R. SIMONS LTD., Harlow, Essex.

CHIP BASKETS, PACKAGES AND ALL PAPERS, at competitive prices. J. E. R. SIMONS LTD., Harlow, Essex.

MUSHROOM TRAYS, cut to your sizes, any shape or design to your drawings, from our sawmills at Harlow. R. C. DARLINGTON, Hastingwood.

HOSES. Haws water cans. Trigger lances complete with rose 35/6d. Special make. R. C. DARLINGTON, Hastingwood.

1-6 ton lots Technical **NITRATE OF POTASH** 99/100% at £67 10s. per ton, delivered 25 miles radius London. Write for analysis. R. C. DARLINGTON, Hastingwood, Harlow, Essex.

PEDIGREE GENUINE WHITE FINISH PAINT, in 5 gallon drums 54/6 per gallon. **PINK PRIMING,** very heavy, 5 gallon drums 51 6d. per gallon. **COOKSON & JOHNSON'S GENUINE ENGLISH WHITE LEAD,** in 5 gallon drums 57/6d. gallon, 100 gallon and over 55/- per gallon. Sample with pleasure, delivered 25 miles radius Hackney Warehouse. R. C. DARLINGTON, Hastingwood, Harlow, Essex. 'Phone: Potter Street 138.

TONKIN CANES. Send for new season's Price List Tonkin Canes 4 ft. 6/8 lbs. to 24/26 lbs. Special price for 50-bale lots *ex* Hackney Warehouse. Also Split Chinese Flower Sticks 24 inch 97/- per 5,000 Bale. Cheapest house in the trade for Sundries. R. C. DARLINGTON, Hastingwood, Harlow, Essex.

ZINC ETHYLENE-BIS-DITHIOCARBAMATE—"386" PRODUCT. In 1 cwt., ¼ cwt., 28 lb. Kegs Free. No less than 7 lb. all at 3/9 per lb. Carriage Forward. R. C. DARLINGTON, Hastingwood, Harlow, Essex.

"386" CASING PEAT, £11 8s. 6d. per ton, £10 5s. 0d. 2 tons, £8 17s. 6d. 4-6 tons lots, *ex* Hackney Warehouse. R. C. DARLINGTON, Hastingwood, Harlow, Essex.

FRESH NORTH GERMAN PEAT, 20 Bushels to the bale, just arrived. Send for ton lot prices. R. C. DARLINGTON, Hastingwood, Harlow, Essex.

GYPSUM. 1 ton lots 4/9; 2 ton 3/9; 4 ton 3/6, no less than ton lots. *ex* Hackney. R. C. DARLINGTON, Hastingwood, Harlow, Essex.

RAFFIA. Raffia, best selected Madagascar. C.P.C. the mark for quality; send for sample. R. C. DARLINGTON, Hastingwood, Harlow, Essex.

STABLE MANURE. We can offer regular supplies from depôt in Leicestershire, also our other usual various sources, for delivery direct by Road or Rail, on certified Board of Trade Weighbridge Weight Tickets only. R. G. WARWICK, Wickham, Hants. ('Phone 3150).

PURE DRIED GROUND POULTRY MANURE. This pure, natural organic is regularly used by prominent mushroom growing firms. It represents an invaluable *organic* activator for stable manure. Finely and evenly ground, it is convenient and clean to handle and being packed in ½ cwt. sacks, the weight you receive is *guaranteed.* Sample and prices (which vary according to the distance for carriage from our Works) on application. Sole Producers:—THE HAMPSHIRE GUANO CO. LTD., SOBERTON, SOUTHAMPTON. (Estd. 1937). Manufacturers of "Gunos" (Regd.) Brand Fertilisers.

PEAT FOR CASING

In the May Bulletin the Editor invited growers who were trying peat as a casing material, with or without soil, to send in their results for the guidance of others.

Anders Wiberg, of Sweden, writes: In Kinne-Kleva we have been very successful in using 25% peat dry weight with 75% of our ordinary casing soil. The peat mixture gave 50% better output in 10 weeks picking, and the mushrooms in quality are very good.

R. R. Howse writes: The peat I am using is ideal from a handling point of view and the mushrooms appearing on an initial test patch compare very favourably with the rest of the house. I am now casing an entire house (1,200 ft.) . . . . . Come what may, I shall not return to soil . . . . . Should my next letter be a "touch" for a fiver you will know what happened! (*No letter, yet!—Editor.*)

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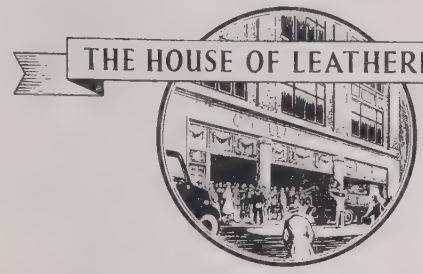

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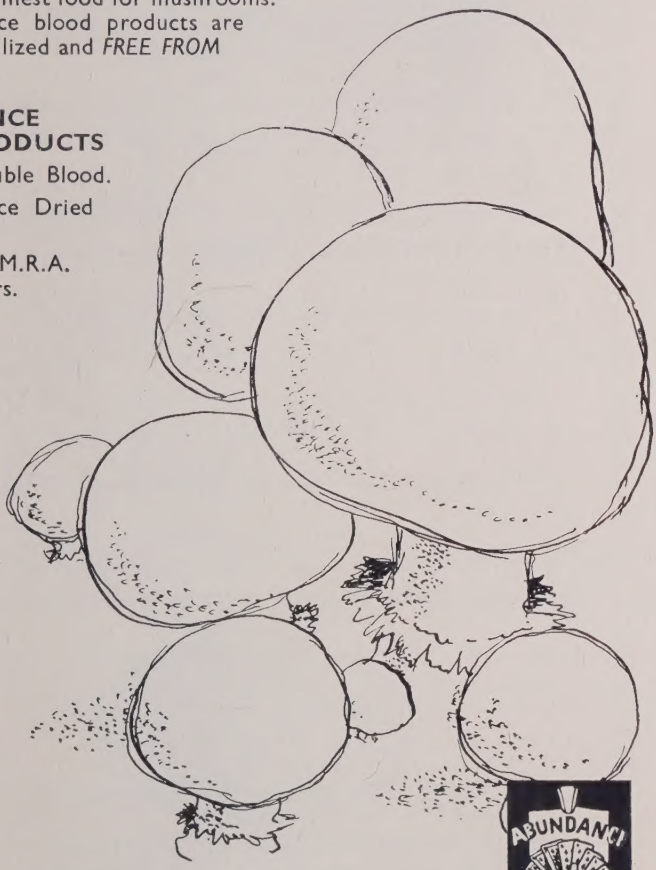

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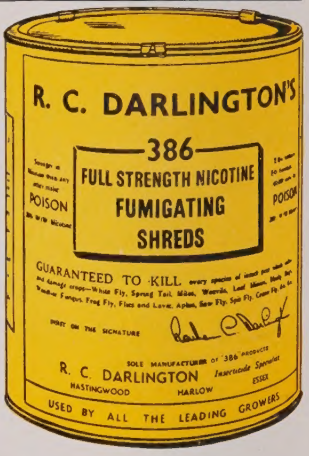

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